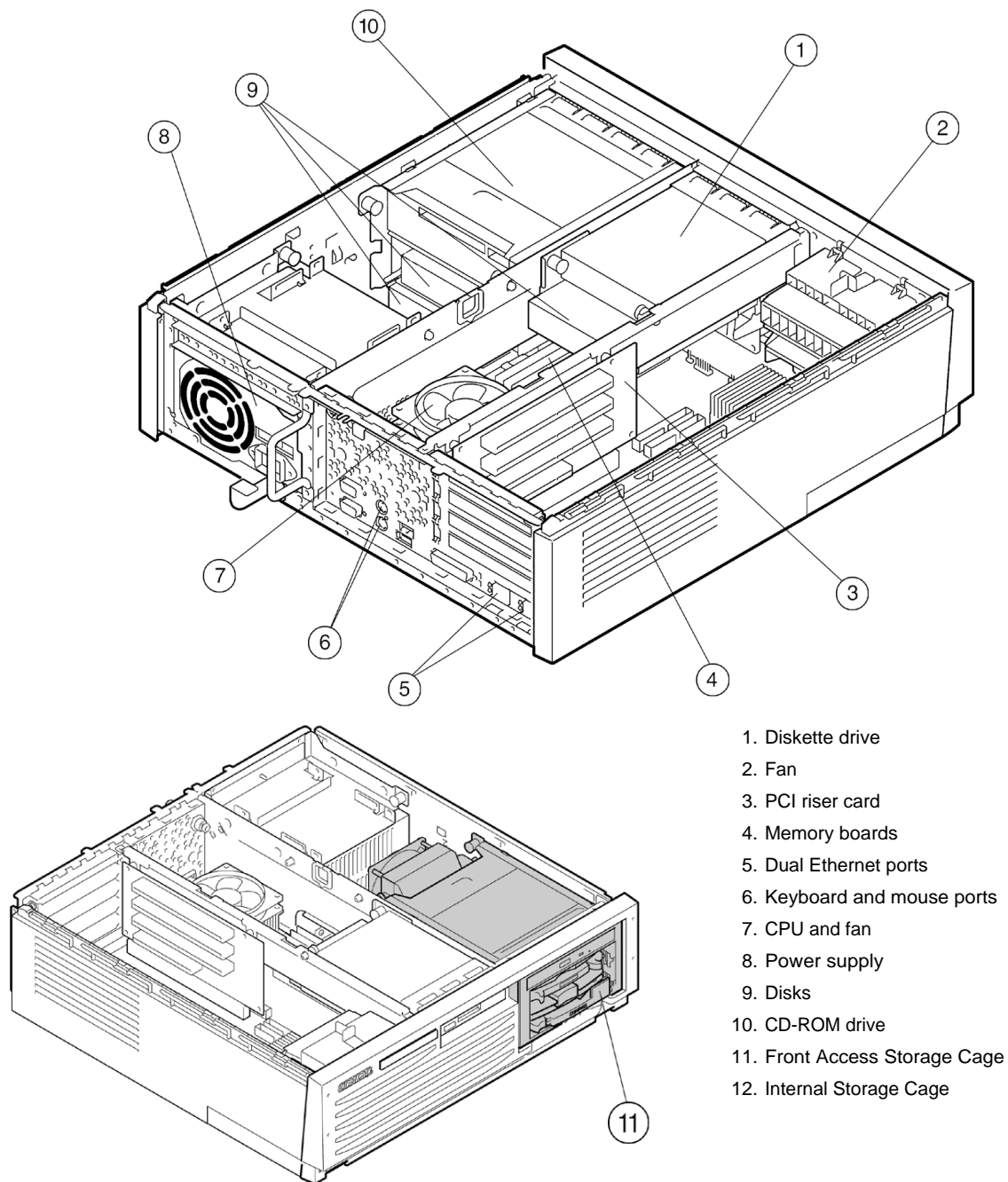
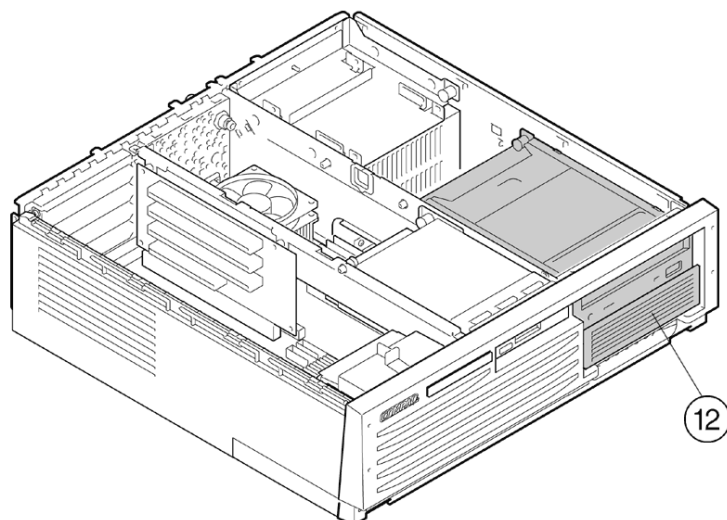


## Overview



MR0050

## Overview



MR0049

## At A Glance

AlphaServer/AlphaStation DS10 3U Systems include:

- Alpha 600-MHz CPU with 2-MB onboard ECC cache
- 512-MB or 1-GB SDRAM memory - expandable to 2-GB maximum memory capacity
- Onboard dual 10/100 BaseT Ethernet ports
- Four PCI expansion slots - three 64-bit PCI slots and one 32-bit PCI slot
- Onboard dual IDE controller
- 1.44-MB diskette drive
- 600-MB CD-ROM drive
- Two storage cage subsystems: Internal Storage Cage for IDE/SCSI tapes/drives; Front Access Storage Cage for SCSI drives
- DS10 Internal Storage Cage Systems can be configured with: three internal 3.5-inch x 1-inch hard disk drives or two internal 3.5-inch x 1-inch hard disk drives and one 5.25-inch x 1.6-inch removable media device
- DS10 Front Access Storage Cage Systems can be configured with: two front access 3.5-inch x 1-inch hard disk drives and two internal 3.5-inch x 1-inch hard disk drives) or one Front Access Universal tape drive (DAT) and two internal disk drives
- Maximum Internal storage capacity: Internal Storage Cage 218-GB SCSI or 120-GB IDE; Front Access Storage Cage-437-GB SCSI
- Two serial ports: COM1 port is both an RMC port with modem control and a full-duplex asynchronous communications port; COM2 port is a full-duplex asynchronous communications port
- Bi-directional enhanced parallel port
- PS/2-style keyboard port and mouse port
- 300W (88-260V, 47-63Hz) power supply
- U.S. English documentation
- Tru64 UNIX or OpenVMS Factory Installed Software
- 90-day software product warranty
- Protected by HP Services, including three-year, on-site hardware with next business day response

## Standard Features

<b>Processor</b>	Alpha 21264A 600-MHz processor	
<b>Cache Memory</b>	2-MB onboard cache	
<b>Upgradability</b>	Standard	One CPU
<b>Memory</b>	Standard	512 MB or 1 GB (one memory kit)
	Maximum	2 GB (two memory kits, kits include two industry-standard DIMMs with ECC support)
<b>Network Controller</b>	Onboard dual 10/100 BaseT Ethernet ports	
<b>Expansion</b>	Storage bays	Internal Storage Cage Systems: Five total - CD-ROM, FDD, and three storage bays: Three internal 3.5-inch x 1-inch hard disk drives or two internal 3.5-inch x 1-inch hard disk drives and one 5.25-inch x 1.6-inch removable media device Front Access Storage Cage Systems: Six Total - CD-ROM, FDD, and Four Storage bays (two front access 3.5-inch x 1-inch hard disk drives and two internal 3.5-inch x 1-inch hard disk drives)
	PCI slots	Four full-length slots (three 64-bit, one 32-bit)
<b>Storage</b>	Diskette Drive	1.44-MB diskette drive
	CD-ROM	Internal Storage Cage Systems: 5.25-inch half height 48X CD-ROM drive Front Access Storage Cage Systems 24X slim-line CD-ROM drive
	Hard Drives	40-GB and 80-GB IDE disk drives or 36.4-GB and 72.8-GB Wide Ultra3 available with the Internal Storage Cage, and 18.2-GB, 36.4-GB, 72.8-GB, or 146-GB Universal SCSI drives available with Front Access Storage Cage. SCSI disk drives require optional SCSI adapter. IDE drives not supported in Front Access Cage systems.
<b>Storage Adapter/Controller</b>	Onboard IDE controller for internal storage, choice of optional storage adapters/controllers	
<b>Expansion Ports</b>	Parallel	One bi-directional enhanced port
	Serial	Two ports, one serial port with full-duplex asynchronous modem control and one RMS dedicated serial port with full-duplex asynchronous modem control
	Keyboard	One PS/2-style port
	Mouse	One port
<b>Power Supply</b>	300W (88-260V, 47-63 Hz)	
<b>Manageability</b>	Insight Manager	

## Standard Features

### Supported Options

A detailed summary of options supported on the AlphaServer/AlphaStation DS10 is available at [http://www.compaq.com/alphaserver/options/asds10/asds10\\_options.html](http://www.compaq.com/alphaserver/options/asds10/asds10_options.html)

### OS Support

AlphaServer DS10 Tru64 UNIX systems include pre-installed software (V5.1B PK3/NHD7), Base license, Unlimited User license, Server Extension license, Internet Express and Secure Web Server

AlphaStation DS10 Tru64 UNIX systems include pre-installed software (V5.1B PK3/NHD7), 2-user Base license

AlphaServer DS10 OpenVMS systems include pre-installed software (V7.3-2), Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS V3.0A.

AlphaStation DS10 OpenVMS systems include pre-installed software (V7.3-2), Base license, Concurrent Use 1-user license, and NAS 150 Client license

Minimum OS support: Tru64 UNIX V4.0F or OpenVMS V7.1 -2

### Service and Support

Protected by HP Services, including a three-year, on-site hardware warranty with next business day response. Software warranty is a 90-day telephone advisory. Training, consulting, network integration, software support, comprehensive system maintenance and guaranteed uptime services are also available for customers requiring higher levels of service and support.

## Systems

### Step 1 – Select system

AlphaServer/AlphaStation DS10 600-MHz systems require the **mandatory** selection of the following items:

- **One Storage Cage** (either Internal Storage Cage or Front Access Storage Cage) **and one system disk**

#### If Internal Storage Cage is selected:

- Mandatory selection of one IDE or one internal SCSI system disk drive
- Mandatory selection of SCSI adapter and SCSI cable kit required for internal SCSI disks and tape

#### If Front Access Storage Cage is selected:

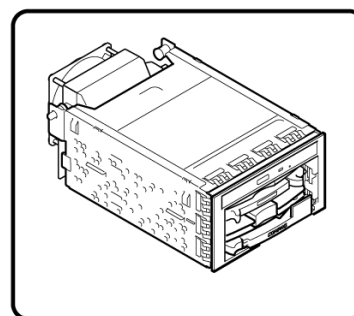
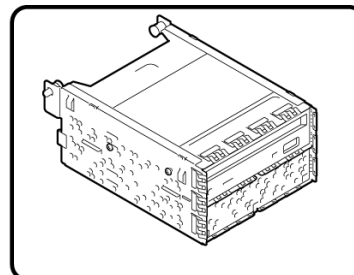
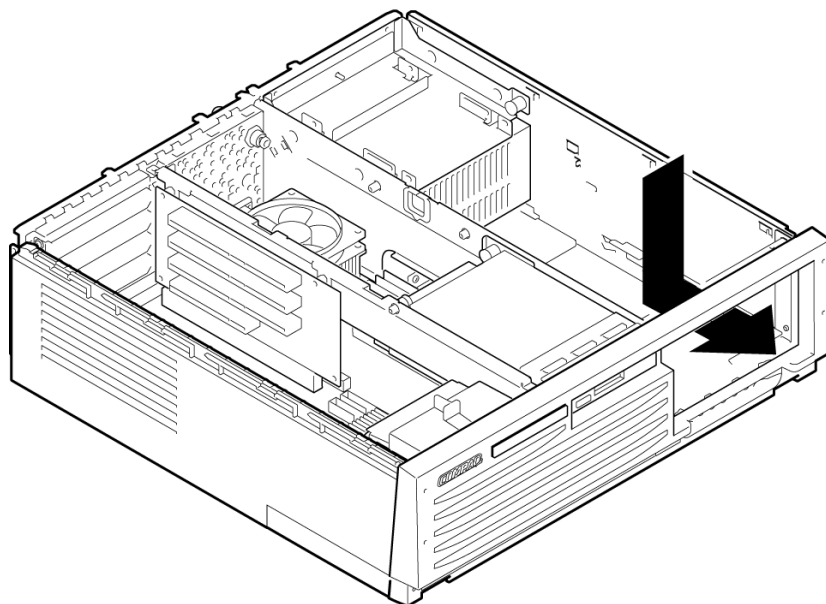
- Mandatory selection of one Universal SCSI system disk drive
- Mandatory selection of SCSI adapter is required for Front Access Storage Cage (cable is included)
- Front Access Storage Cage based system is SCSI only. (IDE drives cannot be used.)
- Country-specific power cord
- Software media and documentation for first system on site
- Rackmount kit for rackmount systems (See Step 5 – M-Series Cabinet Enclosures)
- Minimum OS support: Tru64 UNIX V4.0F or OpenVMS V7.1-2

**NOTE:** Country-specific keyboard and mouse are recommended. See Step 11.

AlphaServer DS10 600-MHz Base Systems							
OS	CPU	Memory	PCI	2-10/100t Ports	Hard Drive	Storage Cage	Order Number
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DA-74BAA-EA
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DA-74BAA-FA
OpenVMS	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DY-74BAA-EA
OpenVMS	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DY-74BAA-FA
Linux-Ready	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-EA
Linux-Ready	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-FA
AlphaStation DS10 600-MHz Base Systems							
OS	CPU	Memory	PCI	2-10/100t Ports	Hard Drive	Storage Cage	Order Number
Tru64 UNIX	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DA-74BAA-EW
Tru64 UNIX	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DA-74BAA-FW
OpenVMS	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DY-74BAA-EW
OpenVMS	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DY-74BAA-FW
Linux-Ready	600 MHz	512 MB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-EW
Linux-Ready	600 MHz	1 GB	4	Onboard	Mandatory	Mandatory	DJ-74BAA-FW

## Systems

### Step 2 – Select Mandatory Options (Storage Cage, System Disk, SCSI Controller, Power Cord)



MR0051

#### Step 2a – Mandatory Selection of Storage Cage

- DS10 Systems support **one** Storage Cage
- Selection of one Storage Cage is **mandatory (no exceptions)**
- DS10 Internal Storage Cage: DS10 System with Internal Cage supports three storage devices:
  - Either three internal hard disk drives or one 5.25-inch half height backup tape and two internal hard disk drives
- DS10 Front Access Storage Cage: DS10 System with Front Access Cage supports up to four storage devices:
  - Two Universal disk drives plus two internal disk drives, or
  - One Front Access Universal Tape Drive (DAT) and two internal disk drives

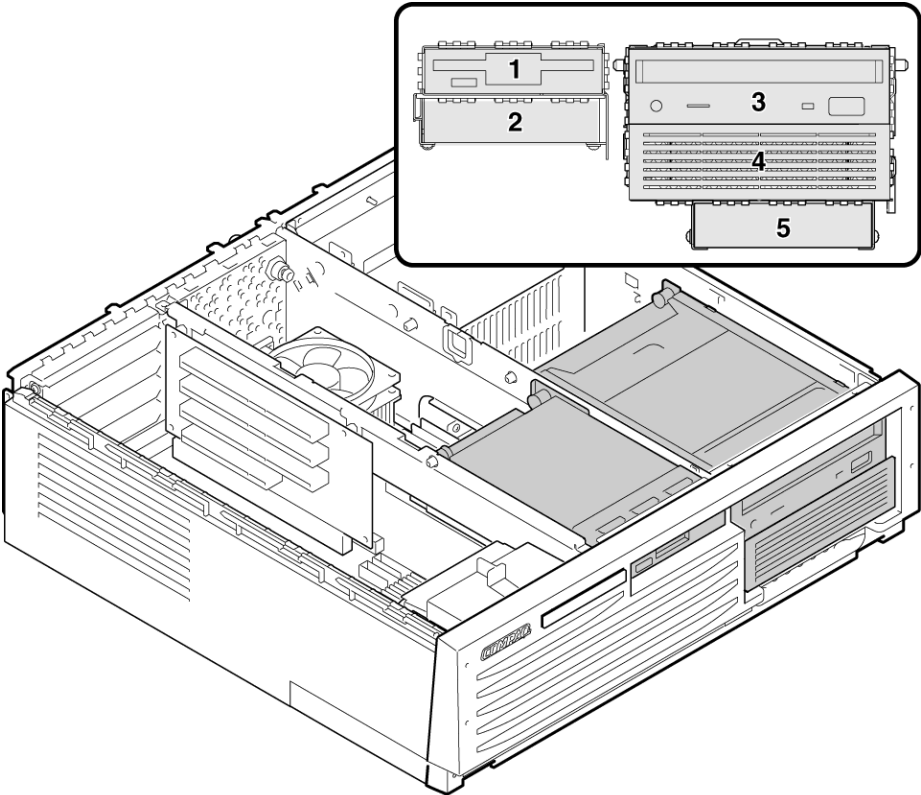
3X-BA10A-AA

3X-BA10B-AA

Systems

Step 2b – Internal Storage Cage - System Disk Drive - Mandatory

- Selection of one system disk drive is mandatory for the Internal Storage Cage (3X-BA10A-AA)
  - Mandatory selection of one IDE or one internal SCSI system disk drive
  - Mandatory selection of SCSI adapter and SCSI cable kit required for internal SCSI disks and tape



- 1. Floppy Disk Drive
- 2. Internal Drive Bay
- 3. CD-ROM
- 4. Internal Drive/Tape Bay
- 5. Internal Drive Bay

MR0052

DS10 Storage Configuration Rules with Selection of Internal Storage Cage:

- DS10 Systems configured with the Internal Storage Cage include a 600-MB 48X half height CD-ROM and 1.44-MB diskette in dedicated drive slots
- DS10 Systems configured with the Internal Storage Cage include three internal storage bays (two in the Storage cage plus one in the system box) that can be configured as follows:
  - Maximum of three internal disk drives (3.5-inch x 1-inch drives) or two internal disk drives (3.5-inch x 1-inch) and one 5.25-inch half height removable media device
- Mandatory selection of SCSI adapter and SCSI cable kit is required for internal SCSI disks or tapes
- IDE Disk drive cable kits are included with the system

**NOTE:** When a tape drive is ordered, it will be installed in the top slot (Slot 3) and the CD will be installed in Slot 4.

Internal IDE Disk Drives	20 GB 7,200 rpm IDE (UDMA) drive	3X-RE58A-AA
	40-GB 7,200 rpm IDE (UDMA) disk drive	3X-RE58A-BA
	<b>NOTE:</b> Requires minimum console firmware V5.9-6 or higher. Updates available at <a href="http://ftp.digital.com/pub/Digital/Alpha/firmware">http://ftp.digital.com/pub/Digital/Alpha/firmware</a>	3X-RE58A-CA
	80-GB 7,200 rpm IDE (UDMA) disk drive	
	<b>NOTE:</b> Requires minimum console firmware V6.0 or higher. Updates available at <a href="http://ftp.digital.com/pub/Digital/Alpha/firmware">http://ftp.digital.com/pub/Digital/Alpha/firmware</a>	

## Systems

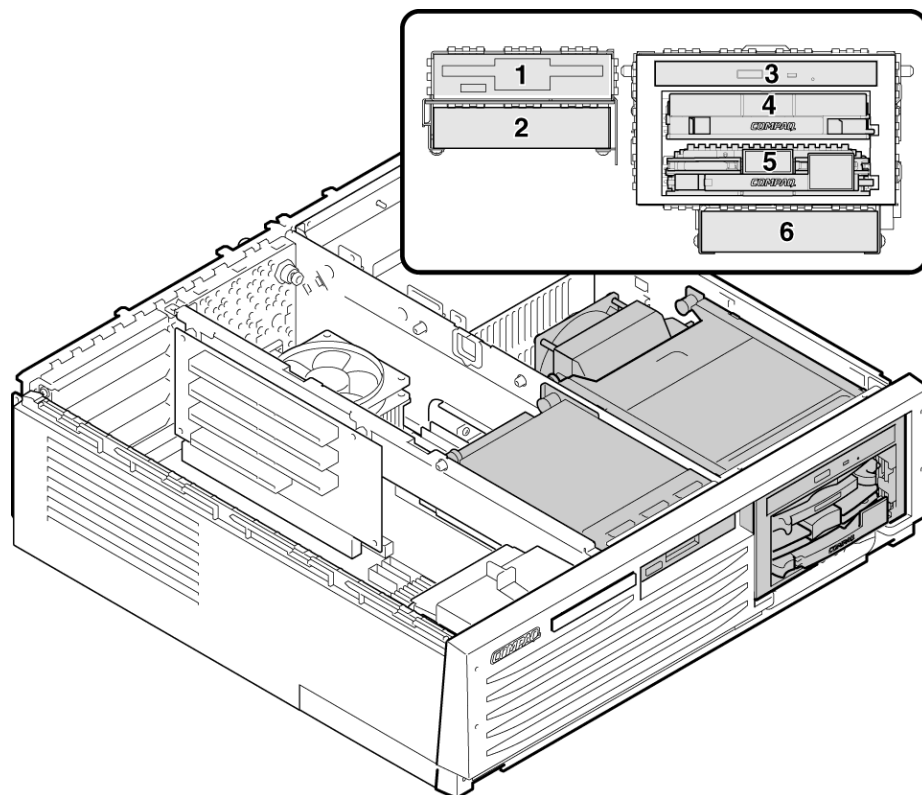
<b>Internal SCSI Disk Drives</b>	36.4-GB Ultra3 SCSI 10,000 rpm drive	DS-RZ3FD-WA
	72.8-GB Ultra3 SCSI 10,000 rpm drive	DS-RZ3GA-WA

<b>Internal Tape Drives</b>	DAT 12/24-GB 4-mm 5.25-inch half-height SCSI tape drive, top gun blue; requires single-ended UltraSCSI or Ultra2/Ultra3 adapter (3X-DEPVZ-AA, 3X-KZPCA-AA, 3X-KZPEA-DB, or KZPCM-DA) and SCSI cable (SCSI adapter, SN-PBXKP-BA required)	TLZ10-LB
	DAT 20/40-GB tape drive, LVD, carbon black (C5686B)	3R-A4752-AA
	See Supported Options List -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	
	DAT 36/72-GB 4-mm 5.25-inch half-height LVD SCSI tape drive, carbon black (Q1522A)	3R-A4544-AA
	DS10 SCSI cable kit (with connections for three internal drives)	3X-BN51A-SE
	<b>NOTE:</b> The DS10 SCSI cable kit is included with the Front Access Storage Cage. The DS10 SCSI cable kit is required for Internal Storage Cage systems with SCSI disks or tapes.	
	DLT 40/80-GB VS 80 half-height tape drive (337699-B21)	3R-A5071-AA



## Systems

### Step 2c – Front Access Storage Cage - System Disk or Tape Drive - Mandatory



1. Floppy Disk Drive
2. Internal Drive Bay
3. CD-ROM
4. Compaq Universal Drive Bay
5. Compaq Universal Drive Bay
6. Internal Drive Bay

MR0053

#### Front Access Storage Cage System Disk Drive Selection - Mandatory

- Selection of one system disk drive is mandatory for each Front Access Storage Cage
- Mandatory selection of SCSI adapter is required for Front Access Storage Cage
- SCSI cable with connections to the four disk drives is included with the Front Access Storage Cage

#### DS10 Storage Configuration Rules with Selection of Front Access Storage Cage:

- DS10 Systems configured with Front Access Storage Cage include a 600-MB 24X slim-line CD-ROM and 1.44-MB drive in dedicated drive slots
- DS10 Systems configured with the Front Access Storage Cage include four storage bays (two Universal SCSI disk drives and two internal SCSI drives) which can be configured as follows:
  - Maximum of two internal disk drives (3.5-inch x 1-inch drives) and two Universal disk drives (3.5-inch x 1-inch) or one Front Access Universal tape drive (DAT) and two internal disk drives.
- Mandatory selection of SCSI adapter for Front Access Cage Systems
- SCSI cable included with Front Access Cage

**NOTE:** IDE drives may not be used in Front Access Cage systems

**Internal SCSI Disk Drives** 36.4-GB Ultra3 SCSI 10,000 rpm drive  
(For Drives  
Internal to System Enclosure) 72.8-GB Ultra3 SCSI 10,000 rpm drive

DS-RZ3FD-WA

DS-RZ3GA-WA

## Systems

<b>Universal Disk Drives</b> (For Front Access Storage Cage)	18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
	36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
	36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
	72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
	72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
	146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-AA

<b>Optional Universal Tape Drives</b> (For Front Access Storage Cage)	DAT 20/40-GB Universal tape drive, LVD, uses two slots. (Q1546A) See Supported Options List - <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	3R-A4745-AA
	DAT 36/72-GB LVD Universal tape drive, carbon black; uses two slots in 3X-BA10B-AA or DS-SL13R-xx storage shelves (Q1529A)	3R-A4547-AA

## Step 2d – Internal SCSI Adapters and Cable Kits

- **Front Access Storage Cage:**
  - Mandatory selection of SCSI adapter is required for Front Access Storage Cage
  - Front Access Storage Cage includes SCSI cable kit for connection to four disks
- **Internal Storage Cage:**
  - Mandatory selection of SCSI adapter and SCSI cable kit are required for Standard Storage Cage systems with SCSI disk or tapes

## Systems

### SCSI Adapters

(For Internal and Front Access Drives)

PCI 1-channel Ultra2 SCSI adapter (LVD)	3X-KZPCA-AA
PCI 2-channel multi-mode Ultra3 LVD SCSI adapter, VHDCI (Tru64 UNIX V5.1 or higher and OpenVMS V7.2-2 or higher) No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus.	3X-KZPEA-DB
<b>NOTE:</b> Tru64 UNIX Initial Patch Kit for V5.1B located at: <a href="http://ftp1.support.compaq.com/public/unix/5.1b">http://ftp1.support.compaq.com/public/unix/5.1b</a>	
<b>NOTE:</b> Patch kit required, kit available at: <a href="http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/">http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/</a>	
PCI combo card - PCI 2-channel UltraSCSI single-ended adapter and 10/100 Mbit	KZPCM-DA
PCI combo card - 1-channel Ultra2 SCSI (LVD) Graphics, 10/100 Ethernet (Tru64 UNIX and OpenVMS only)	3X-DEPVZ-AA
PCI 1-channel UltraSCSI RAID controller (Tru64 UNIX and OpenVMS only)	KZPAC-AA
<b>NOTE:</b> Internal or Front Access Disk Drives connected to a KZPAC controller are not capable of implementing the fault management features of this controller, such as 'hot spare' and 'automatic rebuilds' - manual rebuilds are supported.	
PCI 3-port UltraSCSI RAID controller (4-MB/8-MB cache) (Tru64 UNIX V4.0F, OpenVMS V7.2-1)	KZPAC-CA/CB
<b>NOTE:</b> Internal or Front Access Disk Drives connected to a KZPAC controller are not capable of implementing the fault management features of this controller, such as 'hot spare' and 'automatic rebuilds' - manual rebuilds are supported.	
PCI 1-channel Ultra2 SCSI RAID controller, 4-MB cache (Linux-Ready Systems only)	SN-KZPBC-AA
PCI 3-channel Ultra2 SCSI RAID controller, 32-MB cache (Linux-Ready Systems only)	FR-PCTAR-IB
PCI 3-channel Ultra2 SCSI RAID controller, 64-MB cache (Linux-Ready Systems only)	FR-PCTAR-IC
DS10 SCSI cable kit (with connections for three internal drives)	3X-BN51A-SE
<b>NOTE:</b> The DS10 SCSI cable kit is included with the Front Access Storage Cage. The DS10 SCSI cable kit is required for Internal Storage Cage systems with SCSI disks or tapes.	

### Desktop Power Cords

North America, 2.5-meter	3X-BN46K-2E
North America, 200 to 240V, 75-inch	BN18J-1K
Australia, New Zealand, 2.5-meter (103541-011)	BN19H-2E
Central Europe, 2.5-meter	BN19C-2E
Denmark, 2.5-meter (103541-481)	BN19K-2E
Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
Israel, 2.5-meter	BN18L-2E
Italy, 2.5-meter	BN19M-2E
Japan, 2.5-meter, Dentori approved	3X-BN46G-02
Switzerland, 2.5-meter (103541-511)	BN19E-2E
UK, Ireland, 2.5-meter	BN19A-2E

### Rackmount (M-Series Cabinet) Power Cords

U.S./Canada	BN20Z-4E
Non-U.S.	3X-BN46L-4E
Japan, 4.5-meter (right-angle connector)	3X-BN46D-4E

## Options

### Step 3 – Memory – Optional

- Maximum 2 GB memory
- Systems include one memory kit; maximum two memory kits per system - each kit includes two industry-standard DIMMs with ECC support

512-MB memory kit, two 200-pin, 100-MHz, 256-MB DIMMs

3X-MS310-DA

1-GB memory kit, two 200-pin, 100-MHz, 512-MB DIMMs

3X-MS310-EA

### Step 4 – DVD-ROM Drive – Optional

Optional 16X DVD-ROM Drive - Supported in Internal Storage Cage only - not supported in Front Access Storage Cage - supported in slot 3 of the Internal Storage Cage and replaces standard CD-ROM (see diagram on page 6, Step 2b). Ships as spare, not integrated in manufacturing.

3X-PBXRV-BA

Optional 48X half-height DVD/CD-RW combo, carbon black, for DS10 Internal Storage Cage, supported in 3X-BA10A-AA only

3X-A4412-BA

### Step 5 – M-Series Cabinets or Series 10000 Rack– Optional

#### Step 5a - M-Series Cabinets (Optional)

- M-Series cabinet enclosures support up to 12 DS10 systems (H9A15).
- M-Series enclosures require selection of the following items:
  - H9A10, or H9A15 Cabinet, 120V or 240V
  - Cabinet front door based on cabinet height
  - Factory integration

#### Cabinet Configuration Chart for AlphaServer DS10 Rackmount Systems

- A minimum of two AlphaServer DS10 systems is required in the H9A15 M-Series cabinet.
- Each system requires a DS10 M-Series Rackmount kit (3X-PBX01-AB).
- Each system requires a rackmount power cord.

**NOTE:** The number of ballast kits required is determined only by the number of system boxes. Ballast kits are required according to the following chart. For more information on M-Series Cabinet Enclosures, see

<http://www.compaq.com/alphaserver/products/m-series/index.html>

## Options

Cabinet Configuration Chart for AlphaServer DS10 (3U) Rackmount Systems with Disk Shelves (12U)

M-Series Cabinet	System Rack Kit per DS10 system	M-Series Cabinet Height/Space	DS10 Systems	StorageWorks DS-SL13R/ 3R-A4075-AA/ 3R-A4076-AA* Disk Shelf	Ballast Kits Required
H9A10-MC/MD	3X-PBX01-AB	67-inch/32U	1 or 2	6	2
			3 or 4	6	1
			5	6	1
			6	4	0
			7	2	0
			8, 9, or 10	0	0
H9A15-MC/MD	3X-PBX01-AB	79-inch/39U	2 or 3	6	2
			4	6	1
			5	6	1
			6	4	1
			7	2	0
			8 to 12	0	0

\* 3R-A4075-AA and 3R-A4076-AA are not supported in a shared-SCSI cluster using the 3X-KZPEA-DB.

### M-Series Rackmount Kit for AlphaServer DS10

- Rackmount kit must be ordered separately
- DS10 M-Series rackmount kit

3X-PBX01-AB

**NOTE:** Factory integration of a DS10 system drawer in a 9000 Series Rackmount Cabinet using rack kit, 3X-PBX01-AA, is not supported. Contact Custom Systems.

### M-Series Cabinets

67-inch cabinet enclosure with 59.5-inch or 34U of usable vertical space; 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door, top fan tray, and two H7600-AA power distribution units

H9A10-MC

67-inch cabinet enclosure with 59.5-inch or 34U of usable vertical space; 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units

H9A10-MD

79-inch cabinet enclosure with 71.7-inch or 41U of usable vertical space; 120V dual-24A controller, each with 10 NEMA 5-15R outlets, input power plug NEMA L5-30P, Americas, Asia Pacific; includes rear door, top fan tray, and two H7600-AA power distribution units

H9A15-MC

79-inch cabinet enclosure with 71.7-inch or 41U of usable vertical space; 240V dual-16A controller, each with 12 IEC C13 outlets, input power plug IEC 309, 16A, Europe; includes rear door, top fan tray, and two H7600-DB power distribution units

H9A15-MD

### M-Series Cabinet Front Door

- Requires selection of door based on cabinet height

Front door, top gun blue, for H9A10-MC/MD cabinet enclosure

H9C10-TF

Front door, top gun blue, for H9A15-MC/MD cabinet enclosure

H9C15-TF

### M-Series Cabinet Factory Integration

- Mandatory selection

Factory Integration of systems and storage devices assembled and configured in cabinet enclosure for H9A10 or H9A15 cabinet enclosures

YS-ASCAA-AA

### Options

#### M-Series Cabinet Ballast Kits

- Add ballast kits as required
- Ballast is added to a cabinet at particular locations for specific configurations to meet safety regulations for installation, operation, and service; see Cabinet Configuration Charts

Two 35 to 40 lb steel plates

H9C10-MC

#### M-Series Cabinet

U.S./Canada

BN20Z-4E

#### Rackmount Power Cords

Non-U.S.

BN35S-4E

Japan, 2.5-meter

3X-BN46D-4E

### CustomSystems Support

- Cabinets that contain systems and storage must be assembled by qualified assemblers: HP Manufacturing, CustomSystems, or an authorized HP Certified Integration Partner.
- For custom integration of systems, options, cabinet expansion offerings, and additional HP and third-party devices, or for other cabinets, doors, and trim kits of a different color, contact CustomSystems at 1-800-AT COMPAQ, or your local authorized HP Certified Integration Partner.

### Step 5b Rack 10000 Series - Optional

- 10000 Series rack enclosure supports up to 12 DS10 systems (10642)
- 10000 Series rack enclosure requires selection of the following items:
- 10642 rack
  - Rack sidewall kit or baying kit
  - Deployable stabilizer
  - Power Distribution Unit (PDU)
  - Ballast kits (if required)
  - Factory integration

### Cabinet Configuration Chart for AlphaServer DS10 Rackmount Systems

- 10000 Series rack requires selection of a power distribution unit
- Each system requires a DS10 Rack-mount kit (3X-PBX01-AA).
- Each system requires a rackmount power cord.

**NOTE:** The number of ballast kits required is determined by the number of system boxes. Ballast kits are required according to the following chart. For more information on Rack 10000 Series Enclosures, see

[http://h18004.www1.hp.com/products/quickspecs/10995\\_div/10995\\_div.html](http://h18004.www1.hp.com/products/quickspecs/10995_div/10995_div.html)

### Rack Configuration Chart for AlphaServer DS10 (3U) Rackmount Systems with Disk Shelves (12U)

10000 Series Rack	System Rack Kit per DS10 system	Series 10000 Height/Space	DS10 Systems	StorageWorks DS-SL13R/ 3R-A4075-AA/ 3R-A4076-AA* Disk Shelves	Ballast Kits Required
3R-A3894-AA (10642 42U)	3X-PBX01-AA	79-inch/41U	2-3	6	2
			4	6	1
			5	6	1
			6	4	1
			7	2	0
			8 to 12	0	0

\* 3R-A4075-AA and 3R-A4076-AA are not supported in a shared-SCSI cluster using the 3X-KZPEA-DB.

### Options

<b>10000 Series Rackmount Kit for AlphaServer DS10 Rack 10000 Series (10642)</b>	<ul style="list-style-type: none"> <li>Rackmount kit must be ordered separately</li> </ul>	
	DS10 Series 10000 rackmount kit 79-inch cabinet enclosure with 73.5-inch or 42U of usable vertical space; includes front and rear doors, no side panels, shock pallet	3X-PBX01-AA 3R-A3894-AA
<b>Side Panel Kit</b>	42U graphite metallic	3R-A3895-AA
<b>Baying Kit</b>	(Carbon) - Used to join two or more 10000 Series racks	3R-A4125-AA
<b>Deployable Stabilizer Kit</b>	<ul style="list-style-type: none"> <li>Mandatory selection</li> </ul>	2T-H9C30-MK
<b>Power Distribution Unit (PDU)</b>	<ul style="list-style-type: none"> <li>Mandatory selection</li> </ul>	
	Single Phase, Double Power Controller, 16 outlet North America/Japan 240V Single Phase, Double Power Controller, 16 outlet, Europe 240V	3X-H7609-EB 3X-H7609-DB
<b>Rack 10000 Series Factory Integration</b>	<ul style="list-style-type: none"> <li>Mandatory selection</li> </ul>	
	Factory Integration of systems and storage devices assembled and configured in 10642 rack enclosure	YS-ASCAA-AA
<b>10000 Series Rack Ballast Kit</b>	<ul style="list-style-type: none"> <li>Add ballast kits as required</li> </ul>	
	Ballast is added to the rack at particular locations for specific configurations to meet safety regulations for installation, operation and service. See Rack Configuration Charts.	2T-H9C30-MA
<b>Series 10000 Rackmount Power Cord</b>	Series 10000 Rackmount Power Cord	BN35S-4E

### Step 6 – External Storage – Optional

- Tape drives require an LVD adapter (3X-KZPCA-AA or 3X-KZPEA-DB) or single-ended UltraSCSI adapter (KZPCM-DA) and country-specific power cord.

**NOTE:** 3X-KZPEA-DB does not support shared tape/libraries.

### Tape Devices

### Options

<b>DAT Tabletop Tape Drives</b>	DAT 20/40-GB 4-mm Wide Ultra2 (LVD) tabletop SCSI tape drive with 120V North America power cord, carbon black; requires Ultra2 (LVD) adapter	157770-002
	Same as above, International	157770-B32
	Same as above, Japan	157770-292
	DAT 36/72-GB LVD tabletop SSI tape drive, carbon black	Q1523A
	See Supported Options List -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	
	DAT 40-GB LVD tabletop tape drive, carbon black	C5687C
	See Supported Options List -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	
<b>DAT Hot-plug Tape Drives</b>	DAT 36/72-GB hot-plug LVD Universal tape drive, carbon black; uses two slots in 43xxx storage shelves (Q1529A)	3R-A4547-AA
	DAT 20/40-GB hot-plug LVD Universal tape drive; carbon black; uses two slots in 43xxx storage shelves (Q1546A)	3R-A4745-AA
<b>DAT Autoloaders</b>	DAT 20/40-GB auto loader external; requires BN31W-xx SCSI cable and 3X-KZPCA-AA, or 3X-DEPVZ-AA adapter, North America	166505-001
	Same as above, International	166505-B31
	Same as above, Japan	166505-291
	SureStore DAT 40x6e external auto loader	C5717C
	See Supported Options List -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	
<b>DLT/SDLT Tabletop Tape Drives</b>	DLT8000 tabletop 40/80-GB DLT external tape drive, carbon black - requires 3X-KZPCA-AA LVD adapter - U.S.	146197-B23
	Same as above - Japan	146197-293
	SDLT tabletop 110/220-GB external tape drive, carbon black- requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter - U.S.	192103-002
	Same as above - International	192103-B32
	Same as above - Japan	192103-292
	SDLT tabletop 160/320-GB external tape drive, carbon black - requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter - U.S.	257319-001
	Same as above - International	257319-B31
	Same as above - Japan	257319-291
	DLT 40/80-GB VS 80 half-height external tape drive (337699-B22)	3R-A4982-AA
	DLT 40/80-GB VS 80 half-height external tape drive, International (337699-B31)	3R-A4984-AA
	DLT 40/80-GB VS 80 half-height external tape drive, Japan (337699-291)	3R-A4983-AA



## Options

<b>Ultrium Tabletop Tape Drives</b>	Ultrium 460 tabletop tape drive, four per system, two per SCSI bus, U.S. Supported with 3X-KZPEA-xx, KZPCA-xx, and DEPVZ SCSI adapters only. Ultrium 460 tape drives are cluster friendly devices, but cannot be shared by cluster members. Tru64 UNIX V5.1A requires Patch Kit 4: T64V51AB21AS0004-20030206.tar Tru64 UNIX V5.1B requires Patch Kit 1: T64v51bb03as0001-20021229.tar	Q1519A
	Ultrium 460 tabletop tape drive, same as above, International	Q1520A
<b>DLT/SDLT Tape Libraries</b>	Rackmount kit for H9Axx M-Series cabinets - required for mounting MSL5000 series in M-Series cabinets	254795-001
	MSL5026DLX, DLT tabletop library with one 40/80-GB DLT tape drive, LVD	231821-B21
	MSL5026DLX, DLT tabletop library with two 40/80-GB DLT tape drives, LVD	231821-B22
	MSL5026DLX or MSL5026SL, DLT/SDLT rackmount library, 0 drives - requires rackmount kit (254795-001)	231979-B21
	MSL5026DLX, DLT rackmount library with one 40/80-GB DLT tape drive, LVD - requires rackmount kit (254795-001)	231891-B21
	MSL5026DLX, DLT rackmount library with two 40/80-GB DLT tape drives, LVD - requires rackmount kit (254795-001)	231891-B22
	MSL5026S2, SDLT2 tabletop library with one 160/320-GB SDLT tape drive, LVD	293473-B21
	MSL5026S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD	293473-B22
	MSL5026S2 SDLT rackmount library, 0 drives, LVD - requires rackmount kit (254795-001)	293472-B21
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive, LVD	293472-B22
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293472-B23
	MSL5026S2, SDLT2 rackmount library with one 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B24
	MSL5026S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293472-B25
	MSL5026SL, SDLT tabletop library with one 110/220-GB SDLT tape drive, LVD	302511-B21
	MSL5026SL, SDLT tabletop library with two 110/220-GB SDLT tape drives, LVD	302511-B22
	MSL5026SL, SDLT rackmount library with one 110/220-GB SDLT tape drive, LVD	302512-B21
	MSL5026SL, SDLT rackmount library with two 110/220-GB SDLT tape drives, LVD	302512-B22
	MSL5052, 0 drives, LVD, rackmount	255102-B21
	MSL5052SL SDLT tabletop library with two 110/220-GB drives, LVD	249490-B21
	MSL5052SL SDLT rackmount library with two 110/220-GB drives, LVD - requires rackmount kit (254795-001)	249491-B21
	MSL5052SL SDLT 110/220-GB drive field upgrade, LVD	231823-B22
	MSL5052S2, SDLT2 tabletop library with two 160/320-GB SDLT tape drives, LVD, graphite	293476-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive, LVD	293474-B21
	MSL5052S2, SDLT2 rackmount library with two 160/320-GB SDLT tape drive with Fibre Channel, LVD	293474-B24
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with 0 drives, rackmount LVD	330731-B21
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with one drive, rackmount LVD	330731-B22
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with two drives, rackmount LVD	330731-B23
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with one drive, rackmount Fibre	330731-B24
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with two drives, rackmount Fibre	330731-B25
	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with one drive, tabletop LVD	330788-B21

### Options

	MSL6030 LTO Ultrium 460, 30 cartridge 5U, with two drives, tabletop LVD	330788-B22
	MSL6060 LTO Ultrium 460, 60 cartridge 10U, with 0 drives, rackmount LVD	331196-B23
	MSL6060 LTO Ultrium 460, 60 cartridge 10U, with two drives, tabletop LVD	331195-B21
	MSL6060 LTO Ultrium 460, 60 cartridge 10U, with two drives, rackmount LVD	331196-B21
	MSL6060 LTO Ultrium 460, 60 cartridge 10U, with two drives, rackmount Fibre	331196-B22
	ESL9326SL SDLT tape library with six 110/220-GB SDLT tape drives, LVD	234615-B21
	ESL9326SL SDLT tape library with eight 110/220-GB SDLT tape drives, LVD	234615-B22
	ESL9326SL SDLT tape library with 16 110/220-GB SDLT tape drives, LVD	234615-B26
<b>3U Rackmount Tape Drive Enclosure</b>	3U LVD Rackmount Tape Drive Enclosure for use in H9Axx M-Series Cabinets, 0 drives, carbon black	274338-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black - required for mounting 3U Rackmount Tape Drive Enclosure in M-Series cabinet	3R-A3804-AA
	<b>NOTE:</b> The 3U Tape Drive Enclosure supports up to four internal half-height removable devices, or up to two full height devices. Select up to four DAT devices, or two DLT/SDLT devices with 3U Rackmount Tape Drive Enclosure (274338-B21), or select preconfigured configurations listed below	
	DAT 20/40-GB 3U tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black (157769-B22)	3R-A3752-AA
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	Ultrium 460 tape drive, requires 3X-KZPEA-xx, KZPCA-xx, or DEPVZ SCSI adapter, carbon black; Tru64 UNIX V5.1A requires Patch Kit 4: T64V51AB21AS0004-20030206.tar; Tru64 UNIX V.1B requires Patch Kit 1: T64v51bb03as0001-20021229.tar; OpenVMS support: minimum V7.2-2	Q1518A
	SureStore DAT 40x6i internal auto loader (supported in 274338-B21). See Supported Options List -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for complete listing of supported options and configuration details. See option specific QuickSpecs for complete list of country specific SKUs.	C5716A
	<b>Preconfigured Configurations</b>	
	DLT 40/80-GB, 3U rackmount kit, carbon black	274332-B21
	DLT 40/80-GB, dual-drive, 3U rackmount kit, carbon black	274335-B21
	SDLT 110/220-GB, 3U rackmount kit, carbon black	274331-B21
	SDLT 110/220-GB, dual-drive, 3U rackmount kit, carbon black	274334-B21

## Options

<b>5U Rackmount Tape Drive Enclosure</b>	5U LVD Rackmount Tape Drive Enclosure, carbon black, for use in H9Axx M-Series Cabinets, 0 drives	274339-B21
	Rackmount Kit for H9Axx Series Cabinets, carbon black - required for mounting 5U Rackmount Tape Drive Enclosure in M-Series cabinet	254795-001
	<b>NOTE:</b> The 5U Rackmount Tape Drive Enclosure supports four full-height devices; select up to four DLT or SDLT devices with 274339-B21, or select preconfigured configurations listed below.	
	DLT8000 40/80-GB tape drive, requires 3X-KZPCA-AA LVD adapter, carbon black	146196-B22
	SDLT 110/220-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	192106-B25
	SDLT 160/320-GB tape drive, requires 3X-KZPCA-AA or 3X-KZPEA-DB LVD adapter, carbon black	257319-B21
	<b>Preconfigured configurations</b>	
	SDLT 110/220-GB Tape Array III, 5U rackmount kit, carbon black	274336-B21
	DLT 40/80-GB Tape Array III, 5U rackmount kit, carbon black	274337-B21
	DLT Tape Array III Model 0 enclosure, U.S.	168047-001
Same as above, International		168047-B31
Same as above, Japan		168047-291

<b>Network Storage Routers</b>	<b>NOTE:</b> The following Network Storage Routers are supported with MSL5000 or ELS9000 tape libraries:	
	NSR e1200 one Fibre Channel x two LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, carbon black (262672-B21)	3R-A3746-AA
	NSR e2400 two Fibre Channel x four LVD FC to SCSI Data Router with card cage, Tru64 UNIX and OpenVMS, carbon black (262665-B21)	3R-A3935-AA
	NSR e2400 two Fibre Channel x four LVD FC to SCSI Data Router with no card cage, Tru64 UNIX and OpenVMS, carbon black (262664-B21)	3R-A3745-AA
	NSR N1200 one Fibre Channel x two LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS, supports tape drives and tape libraries (280823-B21)	3R-A3747-AA
	NSR m2402 two Fibre Channel x four LVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS (262653-B21)	3R-A3740-AA
	NSR m2402 two Fibre Channel x four HVD FC to SCSI Data Router, Tru64 UNIX and OpenVMS (262654-B21)	3R-A3741-AA
	NSR ESL e2400-160 two Fibre Channel x four LVD Data Router, Interface Card (330839-B21)	3R-A4743-AA
	NSR MSL e1200-160 one Fibre Channel x two LVD Data Router, CD, graphite	330728-B21
	NSR MSL e1200-160 one Fibre Channel x two LVD Data Router, CD, opal	330728-B22

### Storage Controllers/Host Bus Adapters for StorageWorks Pedestals and Shelves

- Storage controllers require a minimum operating system revision of Tru64 UNIX V4.0F or OpenVMS V7.1-2 unless noted otherwise.
- Each storage controller/adaptor uses one PCI slot

## Options

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
PCI-to-Fibre Channel host bus adapter (168794-B21)	2	2	-	DS-KGPSA-CA
PCI to 2-Gb Fibre Channel adapter, 64-bit/33 MHz, single-channel (261329-B21)	2	2	-	DS-KGPSA-DA
PCI-X to 2-Gb Fibre Channel adapter, 64-bit/66-MHz, single-channel (302784-B21) OpenVMS V7.2-2 requires TIMA Kit: VMS722_FIBRE_SCSI-V0400 OpenVMS V7.3-1 requires TIMA Kit: VMS73_1_SCSI_FIBRE_V0300 OpenVMS V7.3-1 clusters requires TIMA Kit: VMS73_1_CLUSTER_V0100 Tru64 UNIX V5.1A requires NHD 6 and T64V51AB21AS0004-20030206.tar Tru64 UNIX V5.1B requires Patch Kit 1: T64V51BB03AS0001-20021229.tar DS-KGPSA-EA does not support MSA 1000	2	2	-	DS-KGPSA-EA
Fibre Channel cable BNGBX-xx=02, 05, 15, 30, 50 meters (234457-B2x) 234457-B2x=1 (02m), 2 (05m), 3 (15m), 4 (30m), 5 (50m)				BNGBX-xx
PCI-to-Fibre Channel 64-bit adapter, HBA	-	-	2	DS-SWLA4-PD
PCI 2-port UltraSCSI single-ended adapter and 10/100 Mb Ethernet combo adapter	2	2	-	KZPCM-DA
VHDCI male-to-VHDCI male UltraSCSI cable, xx=02, 2E(2.5), 03, 05, 10, 20 meters)				BN37A-xx
PCI 1-port Ultra2 SCSI (LVD) single-ended adapter, 68-pin HD connector, requires BN38C cable (2 to 20 meters) to connect to single-ended UltraSCSI shelf	2	2	3	3X-KZPCA-AA
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPCA-AA adapter				BN38C-xx
PCI 2-channel LVD multi-mode Ultra3 SCSI adapter, VHDCI (supported in dual-bus and single-bus shelves) -- requires use of Ultra160 SCSI cables. <b>NOTES:</b> Patch kit required, kit is available at: <a href="http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/">http://ftp1.support.compaq.com/public/Digital_UNIX/v5.1/</a> No shared bus support with OpenVMS. No shared tape/library support with OpenVMS or Tru64 UNIX. 3X-KZPEA-DB adapter supports shared bus using hard disk drives under Tru64 UNIX V5.1A with PK4 and NHD5 or V5.1B and TruCluster V5.1B with Initial Patch Kit installed; supports maximum of two nodes per shared bus; requires 3X-BN55A-01 Y-cable and connector plug assembly, and 3X-H32CT-AA external LVD terminator per shared bus. Tru64 UNIX Initial Patch Kit for V5.1B located at: <a href="http://ftp1.support.compaq.com/public/unix/5.1b">http://ftp1.support.compaq.com/public/unix/5.1b</a> Refer to 3X-KZPEA-DB QuickSpecs for complete list of restrictions.	1 (V5.1 or higher)	1	-	3X-KZPEA-DB

## Options

Ultra160 SCSI cables xx=02 for 6 feet, 03 for 12 feet, 04 for 24 feet				3X-BC56J-xx
PCI 1-port UltraSCSI differential adapter; includes external 68-pin HD connector; requires BN38C-xx cable (2-25 meters) to connect adapter to Differential UltraSCSI shelf or RAID controller <b>NOTE:</b> Internal Connection is not supported.	2	2	2	3X-KZPBA-CC
68-pin HD male-to-VHDCI male UltraSCSI cable; required for each external UltraSCSI shelf attached to KZPBA-CB adapter				BN38C-xx
PCI 3-channel Ultra2 LVD RAID controller, 64-bit, 64-MB cache <b>NOTES:</b> <ul style="list-style-type: none"> <li>Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.</li> <li>Supported with BA356, DS-SL13R-xx, DS-SSL14-Rx, or 3R-A4075-AA/3R-A4076-AA shelves only.</li> <li>" When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations.</li> <li>Graphics card is required to run the DS-KZPCC-CE console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher.</li> <li>PB2GA-JC/JD graphics cards are not supported.</li> <li>EV6 systems not supported.</li> <li>Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later.</li> <li>Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462. Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar Patch C462.02 is located at: <a href="http://ftp1.support.compaq.com/public/unix/v5.1/">http://ftp1.support.compaq.com/public/unix/v5.1/</a></li> <li>TruCluster V5.1 (restricted to non-shared buses only)</li> </ul>	2 (V4.0F/ 4.0G/ 5.1/V5.1A)	-	-	DS-KZPCC-CE
PCI 1-channel Ultra2 LVD backplane RAID controller, 64-bit, 16-MB cache <b>NOTES:</b> <ul style="list-style-type: none"> <li>Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.</li> <li>Supported with BA356, and DS-SL13R-xx or 3R-A4075-AA/3R-A4076-AA shelves only.</li> <li>When installed in BA356 shelves, part number DS-BA35X-FC is required for non-factory installations.</li> <li>Graphics card is required to run the DS-KZPCC-AC console utilities (SMOR) with SRM console versions lower than V6.0 or, alternatively can be run via serial line and terminal emulation software for SRM V6.0 or higher. PB2GA-JC/JD graphics cards are not supported.</li> <li>EV6 systems not supported. Tru64 UNIX V4.0F requires NHD3 and Patch Kit 4 (BL15) or later.</li> <li>Tru64 UNIX V5.1 requires Patch Kit 3 (BL17) and Early Release Patch C462. Patch Kit 3 (BL17) is located at: T64V5117-C0046202-11060-Manual-ER-20010615.tar Patch C462.02 is located at: <a href="http://ftp1.support.compaq.com/public/unix/v5.1/">http://ftp1.support.compaq.com/public/unix/v5.1/</a></li> <li>TruCluster V5.1 (restricted to non-shared buses only)</li> </ul>	2 (V4.0F/ 4.0G/5.1/ V5.1A)	-	-	DS-KZPCC-AC
PCI 2-port PCI to Ultra3, 64-bit, 66-MHz, LVD backplane RAID controller	1	1	-	3X-KZPDC-BE

## Options

with 128-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx or 3R-A4075-AA/3R-A4076-AA shelves. Requires use of Ultra160 SCSI cables.

### NOTES:

- Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.
- Host-based volume shadowing or shared bus support not supported under OpenVMS.
- Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Requires V5.1B with Initial Patch Kit located at:  
<http://ftp1.support.compaq.com/public/unix/51b>.
- Tru64 UNIX V5.1A support requires patch kit located at:  
<http://ftp1.support.compaq.com/public/unix/V5.1a>

PCI 4-port PCI to Ultra3, 64-bit, 66-MHz, LVD backplane RAID controller with 256-MB cache (uses one PCI slot); requires connection to DS-SL13R-xx or 3R-A4075-AA/3R-A4076-AA shelves. Requires use of Ultra160 SCSI cables.

### NOTES:

- Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.
- Host-based volume shadowing or shared bus support not supported under OpenVMS.
- Tru64 UNIX support: TruCluster support is restricted to non-shared buses only. Requires V5.1B with Initial Patch Kit located at: <http://ftp1.support.compaq.com/public/unix/51b>.
- Tru64 UNIX V5.1A support requires patch kit located at: <http://ftp1.support.compaq.com/public/unix/V5.1a>

Ultra160 SCSI cables, xx=02 for 6 feet, 03 for 12 feet, 04 for 24 feet

PCI 1-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem software and documentation kit and VHDCI female connector; tape drives not supported - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers. Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.

PCI 3-port UltraSCSI RAID controller with 4-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers. Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.

PCI 3-port UltraSCSI RAID controller with 8-MB cache memory, includes RAID Array 230/Plus Subsystem Software and documentation kit; tape drives not supported; SCSI cable required for each active port; requires BN31K-0E for external third-port connection - 18.2-GB or higher disk drives not supported on KZPAC-xx RAID controllers. Connection of RAID controllers directly to DS10 Internal Storage Cage or Front Access Storage Cage is not supported.

Cache battery backup for KZPAC controller

VHDCI male-to-VHDCI male UltraSCSI cable, xx=02, 2E(2.5), 03, 05, 10, 20 m)

**NOTE:** Manufacturing may substitute BN37A-02 cable for specific cabinet configurations

1

1

-

3X-KZPDC-DF

2

2

-

3X-BC56J-xx

KZPAC-AA

2

2

-

KZPAC-CA

2

2

-

KZPAC-CB

KZPSC-UB

BN37A-xx

## Options

SCSI cable/bulkhead assembly kit with KZPAC-CA/CB, allows external connection of one third port				BN31K-0E
SCSI cable/bulkhead assembly kit, supports two third-port connections from KZPAC-CA/CB, allows external connection of two third ports				KZPAC-SB
PCI 1-channel Ultra2 SCSI RAID controller, 4-MB cache (Linux-Ready systems only)	-	-	3	SN-KZPBC-AA
PCI 3-channel Ultra2 SCSI RAID controller, 32-MB cache (Linux-Ready systems only)	-	-	3	FR-PCTAR-IB

<b>HVD to LVD Converters</b>				
<p>HVD (High Voltage Differential) adapters and LVD (Low Voltage Differential) devices are normally incompatible due to their different signaling voltage levels. This incompatibility does not allow direct communication between the different technologies. The HVD to LVD converter allows connectivity between legacy HVD Host Bust Adapters and today's LVD devices. The converter provides:</p> <ul style="list-style-type: none"> <li>Connectivity in direct attach or shared configurations of all currently available LVD devices, including disks, tapes, libraries, and shelves (4314 or 4354) when used with the KZPBA-CB and 3X-KZPBA-CC HVD adapters. With the retirement of StorageWorks 1 disks and HVD shelves (BA36R), converters are desirable where upgrades to LVD HBAs or upgrades to current operating system versions are not possible.</li> </ul>				
Shared and direct attach configurations are interconnected much the same as those previously configured with homogeneous HVD solutions, except that the HVD output is now passed through the converter before proceeding to the LVD device				
HVD to LVD one-port rackmount converter (see QuickSpecs for configuration details)				3X-DWZCV-BA
HVD to LVD two-port rackmount converter (see QuickSpecs for configuration details)				3X-DWZCV-CA

## External Storage Solutions/Controllers

### Enterprise Virtual Array 5000

The Enterprise Virtual Array 5000 (EVA5000) is the mid to high-range member of the HP StorageWorks virtual disk array enabled by VersaStor technology. The EVA5000 is designed for the data center where there is a critical need for ever-increasing capacity/replication requirements, performance demands and business continuance needs. Support is provided for HP StorageWorks Continuous Access, HP StorageWorks Business Copy, and HP OpenView Storage Operations Management Software. The EVA5000 is a full 2-Gb end-to-end Fibre Channel Array that operates in 1-Gb, 2-Gb or mixed 1-Gb/2-Gb SAN fabrics.

The EVA5000 is available in pre-defined configurations with controllers and expansion configurations without controllers. There is also a pre-defined configuration that is optimized for the High Performance Technical Computing (HPTC) environments. For ordering information and configuration rules, refer to the EVA5000 QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/11006\\_div/11006\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11006_div/11006_div.HTML)



## Options

### Enterprise Virtual Array 3000

The Enterprise Virtual Array 3000 (EVA3000) is the mid-range member of the HP StorageWorks virtual disk array enabled by VersaStor technology. The EVA3000 is designed for the data center where there is a critical need for ever-increasing capacity/replication requirements, performance demands and business continuance needs. Support is provided for HP StorageWorks Continuous Access, HP StorageWorks Business Copy, and HP OpenView Storage Operations Management Software. The EVA3000 is a full 2-Gb end-to-end Fibre Channel Array that operates in 1-Gb, 2-Gb or mixed 1-Gb/2-Gb SAN fabrics. The EVA3000 is available in one of four integrated "independent bundle" configurations, which includes one pair of HSV100 controllers, two FC drive enclosures, and 8 to 16 FC hard drives (bundle dependent). For ordering information and configuration rules, refer to the EVA3000 QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/11619\\_div/11619\\_div.HTML](http://h18000.www1.hp.com/products/quickspecs/11619_div/11619_div.HTML)

### MSA1000 SAN Storage Array

MSA1000 StorageWorks Modular SAN Array, supported with DS-KGPSA-CA and DS-KGPSA-DA adapters; requires connection via a switch - no direct connect; no support for FC arbitrated loop. (201723-B22)  
Tru64 UNIX V5.1A requires Patch Kit 4: T64V51AB21AS0004-20030206.tar  
Tru64 UNIX V5.1B requires Patch Kit 1: T64V51BB03AS0001-20021229.tar  
OpenVMS V7.3-1 requires TIMA Kit: VMS731\_MSA1000-V0100  
OpenVMS V7.3 requires TIMA Kit: VMS73\_FIBRE\_SCSI-V0500  
OpenVMS V7.2-2 requires TIMA Kit: VMS722\_FIBRE\_SCSI-V0400  
See Systems and Options Listing --  
[http://www.compaq.com/alphaserver/options/asds10/asds10\\_options.html](http://www.compaq.com/alphaserver/options/asds10/asds10_options.html)-- for configuration details.

3R-A4328-AA

### Fibre Channel Switches

HP supports three product lines of Fibre Channel switch products that may be used to build SAN fabrics. Each product line provides certain advantages that apply to specific applications. For more information on specific switch models and selection, please refer to Chapter 2 in the SAN Design Guidelines:

<http://www.hp.com/go/SANDesignGuide>

The B-Series product line includes a wide range of Fibre Channel switches, described as "SAN switches" and "Core switches." Products in this family include switches from the HP StorageWorks SAN Switch 2/16 to the HP StorageWorks Core Switch 2/64. This product line includes switches with 8, 16, 32, and 64 ports, including both full-function and entry-level models. The HP StorageWorks Core Switch 2/64 includes a pair of independent 64-port switches in a single chassis with a high level internal redundancy.

The C-Series product line includes the Cisco MDS 9506 and 9509 Multilayer Directors and the Cisco MDS 9216, 9120, and 9140 Multilayer Fabric Switches. The MDS 9506 is supported with 224 ports, over seven modular chassis consisting of both 16-port and 32-port modules. The MDS 9506 is supported with 128 ports, over four modular chassis consisting of both 16 port and 32 port modules. The MDS 9216 has a basic configuration with 16 ports. It has an expansion slot that supports either a 16- or a 32-port card, for 32 or 48 ports in total.

The M-Series Fabric product line includes a wide range of Fibre Channel switches described as "Directors" and "Edge switches." A partial list of products in this family includes the HP StorageWorks Director 2/140 and the HP StorageWorks Edge Switch 2/32. This product line includes switches with 16, 24, 32, 64, and 140 ports internal microcode. The HP StorageWorks Director 2/64 and 2/140 switches have a high level of internal redundancy.

For part number and configuration information, see the SAN infrastructure switch information at

<http://www.hp.com/go/san>

Also, See Supported Options List at -- [http://www.compaq.com/alphaserver/options/asds10/asds10\\_options.html](http://www.compaq.com/alphaserver/options/asds10/asds10_options.html) -- for complete listing of supported options and configuration details.



## Options

<b>Fibre Channel Disk Drives</b>	36-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238590-B21)	3R-A3239-AA
	72-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (238921-B21)	3R-A3260-AA
	146-GB 10K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (293556-B21)	3R-A3975-AA
	36-GB 15K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (236205B21)	3R-A3210-AA
	72-GB 15K rpm dual-port 2-Gb/sec FC-AL 1-inch (25.4mm) drive (293568-B21)	3R-A3971-AA
<b>StorageWorks Universal Drive Shelves – Model 4314R (Ultra3)</b>	StorageWorks Model 4314R Ultra3 SCSI (LVD) single bus, Universal drive rackmount shelf, North America and International, except Japan	DS-SL13R-AA
	Same as above, Japan	DS-SL13R-AJ
<b>StorageWorks Universal Drive Shelves – Model 4354R (Ultra3)</b>	StorageWorks Model 4354R Ultra3 SCSI (LVD), dual bus, Universal drive rackmount shelf, North America and International, except Japan	DS-SL13R-BA
	Same as above, Japan	DS-SL13R-BJ
<b>StorageWorks Modular Smart Array 3000 (Ultra320)</b>	StorageWorks Modular Smart Array SW4414R Single Bus Ultra320 Rackmountable SCSI Disk Drive 4-node Storage Enclosure (302969-B21). See Systems and Options Listing for configuration details.	3R-A4075-AA
	StorageWorks Modular Smart Array SW4454R Dual Bus Ultra320 Rackmountable SCSI Disk Drive 4-node Storage Enclosure (302970-B21). See Supported Options List at -- <a href="http://www.compaq.com/alphaserver/options/asds10/asds10_options.html">http://www.compaq.com/alphaserver/options/asds10/asds10_options.html</a> -- for configuration details.	3R-A4076-AA
	<b>NOTE:</b> * 3R-A4075-AA and 3R-A4076-AA are not supported in a shared-SCSI cluster using the 3X-KZPEA-DB.	
<b>StorageWorks Universal Drive Shelves – Model 4314T (Ultra3)</b>	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, U.S. (190210-001)	DS-SL13T-AA
	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, International (190210-B31)	DS-SL13T-AB
	StorageWorks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, Japan (190210-291)	DS-SL13T-AJ
<b>StorageWorks Universal Drive Shelves – Model 4200 to Model 4300 Upgrade I/O Modules</b>	StorageWorks Model 4300 Ultra 160 single-port LVD I/O Module (190212-B21)	DS-SE3ZJ-DA
	StorageWorks Model 4300 Ultra 160 dual-port LVD I/O Module (190213-B21)	DS-SE3ZJ-SA
<b>System Disk Drives</b> (Supported in Model 4314R, 4314T, or 4354R Universal Drive Shelves)	18.2-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3848-AA
	36.4-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3838-AA
	36.4-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3849-AA
	72.8-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3839-AA
	72.8-GB Ultra320 SCSI 15,000 rpm 1-inch Universal disk drive	3R-A3851-AA
	146-GB Ultra320 SCSI 10,000 rpm 1-inch Universal disk drive	3R-A3841-AA

Options

<b>Enterprise Virtual Array Model 8C8D</b>	Enterprise Virtual Array Model 8C8D 60-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	239782-001
	Enterprise Virtual Array Model 8C8D 50-Hz, includes 42U opal storage cabinet, four M3220 controller assembly with eight HSV110 controllers, eight M5214 dual FC loop 14-bay drive enclosures	249977-B21

Options

Step 7 - UltraSCSI RAID Array Controllers - Optional

StorageWorks Disk Array Family	<b>NOTE:</b> The HP StorageWorks Disk Array Family, specifically the XP128 and XP1024, are now supported on AlphaServer DS10 systems. For product and ordering information, refer to the following Web pages: <a href="http://www.hp.com/products1/storage/products/disk_arrays/highend/xp1024/index.html">http://www.hp.com/products1/storage/products/disk_arrays/highend/xp1024/index.html</a> <a href="http://www.hp.com/products1/storage/products/disk_arrays/highend/xp128/index.html">http://www.hp.com/products1/storage/products/disk_arrays/highend/xp128/index.html</a> The following part numbers have been assigned for reference purposes only:		
	3R-A4417-AA	A7876A	XP128 Disk Array Control Frame
	3R-A4418-AA	A7906A	XP1024 Disk Array Control Frame

## Options

### Step 8 - Networks and Communications - Optional

- Reference individual product information for operating system support.
- Systems include dual embedded 10/100 BaseT Ethernet ports (BN25G-xx cable must be ordered separately)
- Additional Ethernet ports can be added using available PCI slots

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
<b>Ethernet 10/100/1000</b>				
Single-port 100Mbps (MMF/duplex-SC) add-on daughter card for use with 3X-DE602-BB. The combined 3X-DE602-BB 3X-DE602-FA provides two 10/100 (UTP/RJ45s) and one 100Mbps (MMF/SC) ports in a single PCI slot option. Maximum two per system, maximum ten 10/100 Ethernet ports supported per system. Use BN34A or BN34B cables. <b>NOTE:</b> <ul style="list-style-type: none"> <li>● The 3X-DE602-FA cannot be used standalone.</li> <li>● Two 10/100 Ethernet ports included with DS10 system.</li> </ul>	2	1	-	3X-DE602-FA
PCI (32-/64-bit, 33-/66-MHz) dual-port 10/100 Ethernet (UTP/RJ45s) NIC and Base Module. (One 3X-DE602-TA or 3X-DE602-FA optional add-on daughter card can be combined with this module.) Maximum two per system, maximum ten 10/100 Ethernet ports per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables. <b>NOTE:</b> Two 10/100 Ethernet ports included with DS10 system.	2	2	-	3X-DE602-BB
Dual-port 10/100 Ethernet (UTP/RJ45) add-on daughter card for use with the 3X-DE602-BB only. The combined 3X-DE602-BB and 3X-DE602-TA modules provide four 10/100 (UTP/RJ45s) ports in a single PCI slot option; allows for a maximum of 16 ports per system. Maximum two per system, maximum ten 10/100 Ethernet ports per system. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables. <b>NOTES:</b> <ul style="list-style-type: none"> <li>● The 3X-DE602-TA cannot be used standalone.</li> <li>● OpenVMS V7.3 requires Tima Kit: DEC-AXPVMS-VMS73_LAN-V0100-4.PCSI</li> <li>● OpenVMS V7.2-2H1 requires OpenVMS Tima Kit located at: <a href="http://ftp.support.compaq.com/patches/new/openvms.shtml">http://ftp.support.compaq.com/patches/new/openvms.shtml</a></li> <li>● Two 10/100 Ethernet ports included with DS10 system.</li> </ul>	2	2	-	3X-DE602-TA

## Options

Cable for 10BaseT twisted pair connection				BN25G-xx
PCI (32-/64-bit, 33-/66-MHz) single-port 1000 Mbps (MMF/SC) NIC; no on-board boot-ROM support. Use BN34A or BN34B cables.	1	1	1	DEGPA-SA
PCI single-port 1000 Mbps (MMF with duplex-SC) Gigabit Ethernet <b>NOTES:</b> <ul style="list-style-type: none"> <li>Requires OpenVMS V7.3-1 plus TIMA kits located at DEC-AXPVMS-VMS731_PCSI_V0100-4.PCSI then DEC-AXPVMS-VMS731_LAN_V06004.PCSI</li> <li>Tru64 UNIX V5.1A requires Patch Kit 004 - T64V51AB21AS0004-20030206.tar and Early Release Patch Kit - T64V51AB21-C0127901-19213-E-20030710.tar</li> <li>Tru64 UNIX V5.1B requires Patch Kit 2 - T64V51BB22AS0002-20030415.tar and Early Release Patch Kit to update driver to v1.0.21 - Early Release Patch Kit - T64V51BB22-C0019200-1912-E-20030710.tar</li> </ul>	2	2	-	3X-DEGXA-SA
Use BN34A, BN34B, or equivalent cables with SC connectors.				
PCI single-port 10/100/1000Mbps (Twisted-Pair Copper with RJ45) Gigabit Ethernet <b>NOTES:</b> <ul style="list-style-type: none"> <li>Requires OpenVMS V7.3-1 plus TIMA kits located at DEC-AXPVMS-VMS731_PCSI_V0100-4.PCSI then DEC-AXPVMS-VMS731_LAN_V06004.PCSI</li> <li>Tru64 UNIX V5.1A requires Patch Kit 004 - T64V51AB21AS0004-20030206.tar and Early Release Patch Kit - T64V51AB21-C0127901-19213-E-20030710.tar</li> <li>Tru64 UNIX V5.1B requires Patch Kit 2 - T64V51BB22AS0002-20030415.tar and Early Release Patch Kit to update driver to v1.0.21 - Early Release Patch Kit - T64V51BB22-C0019200-1912-E-20030710.tar</li> </ul>	2	2	-	3X-DEGXA-TA
Use BN25G, BN26M, BN24Q, BN28Q twisted pair RJ45 cables.				
<b>Multi-function Ethernet 10/100</b>				
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	-	3X-DEPVZ-AA
3X-DEPVZ-AA specific-use 3-meter LVD2 SCSI cable				BN37A-03
PCI-to-Gigabit Ethernet adapter – UTP, with RJ45 (no boot support)	1	1	1	DEGPA-TA
<b>FDDI</b>				
PCI FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector	1	1	-	3X-DEFPA-AC
PCI (32-bit, 33-MHz) to FDDI DAS (MMF/duplex-SC) NIC. Use BN34A, BN34B, or BN34D cables.	1	1	-	3X-DEFPA-DC
FDDI-specific cable - Multimode fiber optic (MMF) 62.5/125um duplex cable with SC-to-MIC connectors. -xx = available lengths: (01, 03, 10) for 1, 3, 10 meters				BN34D-xx
SC-to-SC dual fiber optic cable mm, pp xx = length in meters				BN34B-xx
PCI (32-bit, 33-MHz) to FDDI SAS (UTP/RJ45) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	1	1	-	3X-DEFPA-UC
PCI (32-bit, 33-MHz) to FDDI DAS (UTP/RJ45s) NIC. Use BN25G, BN26M, BN24Q, or BN28Q twisted pair RJ45 cables.	1	1	-	3X-DEFPA-MC

## Options

<b>ATM</b>				
PCI (32-bit, 33-MHz) to 155 Mbps ATM, copper NIC with RJ45 connector. Use BN25G-xx, or BN26M-xx cables.	2 (V4.0F)	2 (V7.2-1)	-	3X-DAPBA-UA
PCI (32-bit, 33-MHz) to 155 Mbps ATM fiber NIC with SC connector. Use BN34B-xx cable.	2 (V4.0F)	2 (V7.2-1)	-	3X-DAPBA-FA
<b>Asynchronous Communications (ASYNC)</b>				
PCI (32-bit, 33-MHz) to quad-port Async Communications NIC with DB-25 octopus cable				PBXDA-BA
PCI (32-bit, 33-MHz) to 8-port Async Communications NIC with DB-25 octopus cables				PBXDA-BB
PCI 16-port asynchronous controller, cable included; maximum three PBXDA-Ax per system	3 (V4.0F)	3	-	PBXDA-AC
<b>PBXDA-AC Asynchronous Connector Adapters</b>				
RJ45 to DB-25 converter cable				CXI01-AC
RJ45 to DEC MJ11 converter cable (8 pack)				CXI01-AF
<b>Synchronous Communications (SYNC)</b>				
PCI (32-bit, 33-MHz) to dual-port intelligent synchronous communications NIC. Requires at least one (maximum two) BN34x synchronous cable listed below.	2	2	-	3X-PBXDD-AA
PCI (32-bit, 33-MHz) to quad-port intelligent synchronous communications NIC. Requires at least one (maximum four) BN34x synchronous cable listed below.	2	2	-	3X-PBXDD-AB
<b>Synchronous-Specific Cables</b>				
EIA-530 single-port cable				3X-BC34G-06
V.24/EIA-232 single-port cable				3X-BC34L-06
V.11/x.21 single-port cable				3X-BC33S-06
V.35 single-port cable				3X-BC34T-06

## Options

<b>Ethernet, FDDI, ATM Multi-use Cables</b>				
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-ST connectors. -xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 meters				BN34A-xx
Multimode fiber optic (MMF) 62.5/125um duplex cable, with SC-to-SC connectors. -xx = available lengths: (2E, 4E, 01, 03, 10, 20, 30) for 2.4, 4.5, 1, 3, 10, 20, 30 meters				BN34B-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0B, 0E, 01, 03, 04, 07) for 0.2, 0.5, 1, 3, 4, 7 meters				BN25G-xx
Category 5e (4-Twisted Pairs, Screened / ScTP) straight-through cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN26M-xx
Category 5e (4-Unshielded Twisted Pairs / UTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN24Q-xx
Category 5e (4-Twisted Pairs, Screened / ScTP) Xover cable with RJ45-to-RJ45 connectors for system to switch, repeater, or hub connectivity. -xx = available lengths: (0E, 01, 03, 04, 07) for 0.5, 1, 3, 4, 7 meters				BN28Q-xx

## Options

### Step 9 - Graphics Adapters - Optional

- RAID Configuration Utility is accessible via console port for Tru64 UNIX and OpenVMS systems; optional graphics capability available
- Select graphics adapter, monitor, and country-specific keyboard if required
- Open3D license ships with PowerStorm 300/350 graphics accelerators - Open3D drivers and libraries ship with either the operating system or graphics accelerator.

	Maximum # Supported			
	Tru64 UNIX	OpenVMS	Linux	
ATI RADEON 7500 64-MB PC I 2D/3D Graphics Accelerator <b>NOTE:</b> Only RADEON 7500 PCI cards can be used in a multi-card environment. For multi-head support, refer to <a href="#">Read Me First document/Release Notes</a> . Tru64 UNIX requires V5.1B with Patch Kit 1: Tru64V51BB03AS0001-20021229.tar OpenVMS requires V7.3-1 with TIMA Kit: DEC-AXPVMS-VMS731_GRAPHICS-V0200--4.PCSI	4 - (2D only) 1 - 3D Dual head on first card only (unique video using DVI port for 2D or 3D) V5.1B	4 - 2D/3D Dual head on first card only (cloned video using DVI port for 2D or 3D) V7.3-1	-	3X-PBXGG-AA
Tru64 UNIX Open 3D license for RADEON 7500 (required for 3D functionality)				QL-6ZRA9-AA
OpenVMS Open3D license for RADEON 7500 (required for 3D functionality)				QL-0ADA9-AA
Additional Tru64 UNIX media kit for RADEON 7500 (initial kit ships with RADEON 7500 card)				QA-6ZRAA-H8
Additional OpenVMS media kit for RADEON 7500 (initial kit ships with RADEON 7500 card)				QA-6ZPAA-H8
PowerStorm 300 3D multi-head graphics accelerator with 15-MB frame buffer memory and 16-MB texture memory	3	3	-	SN-PBXGD-AD
PowerStorm 350 3D multi-head graphics accelerator with 30-MB frame buffer memory and 32-MB texture memory	3	3	-	SN-PBXGD-AE
PCI combo adapter, Permedia P2 graphics, 10/100 NIC, 1-port SCSI	1	1	-	3X-DEPVZ-AA

### Step 10 - Monitors - Optional

- Graphics monitors other than those listed below can be used if compatible with SVGA graphics ordered with system.
- A video cable, 6-foot/1.8-meter length, is included with all variants of monitors.
- Video extension cable required if monitor is located more than 1.5-meters from system.
- Monitors ship with, but are not integrated with the system.



## Options

<b>Carbon/Silver Monitors</b>	V7550 17-inch (16-inch viewable image size) flat-faced shadow mask color monitor, two-tone (carbon/silver), 0.25mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO99/Energy Star compliant, Northern Hemisphere with North America power cord, VGA cable	3R-A4002-AA
	Same as above, with Euro power cord	3R-A4201-AA
	Same as above, APD, no power cord	3R-A4202-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4203-AA
	S7500 17-inch (16-inch viewable image size) FST multi-frequency color monitor, 2-tone (carbon/silver), 0.24-mm dot pitch, VGA to 1024 x 768 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with PRC power cord CCIB, VGA cable	3R-A4800-AA
	P930 19-inch (18-inch viewable image size) auto-scanning color monitor, Diamondtron NF, 0.24-mm aperture grille pitch, VGA to 1600 x 1200 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with North America power cord, VGA cable	3R-A4215-AA
	Same as above, with Euro power cord	3R-A4391-AA
	Same as above, Taiwan, with North America power cord	3R-A4392-AA
	Same as above, Southern Hemisphere, 0.25 to 0.27 mm aperture grille pitch, with Australia/New Zealand power cord	3R-A4393-AA
	S9500 19-inch (18-inch viewable image size) FST multi-frequency color monitor, 2-tone (carbon/silver), 0.24-mm dot pitch, VGA to 1280 x 1024 @85 Hz, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with PRC power cord CCIB, VGA cable	3R-A4801-AA
	P1130 21-inch (19.8-inch viewable image size) FD Trinitron auto-scanning color monitor, 0.24-mm aperture grille pitch, VGA to 1792 x 1344 @85Hz, dual video input, USB Hub, MPRII/TCO 99/Energy Star Compliant, Northern Hemisphere with North America power cord, VGA cable	3R-A4216-AA
	Same as above, with Euro power cord	3R-A4396-AA
	Same as above, Taiwan, no power cord	3R-A4397-AA
	Same as above, with PRC power cord, CCIB	3R-A4400-AA
	Same as above, Southern Hemisphere, with Australia/New Zealand power cord	3R-A4398-AA
<b>Carbon/Silver Flat Panel Monitors</b>	TFT1825, 18-inch (18-inchviewable image size) TFT flat panel monitor, 0.28mm pixel pitch, 1600 x 1200 @60Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, one VGA, one DVI-I input connector, North America power cord, VGA and DVI-I cables	3R-A4292-AA
	L1530, 15-inch (15-inch viewable image size) TFT flat panel monitor, 0.297 mm pixel pitch, 1024 x 768 @60 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, two video input connectors (one VGA and one DVI-I), North America power cord, VGA and DVI-I cables	3R-A4857-AA
	L1530, 15-inch (15-inch viewable image size) TFT flat panel monitor, 0.297 mm pixel pitch, 1024 x 768 @60 Hz, multi-mode support, MPRII/TCO99/Energy Star compliant, two video input connectors (one VGA and one DVI-I), Euro power cord, VGA and DVI-I cables	3R-A4858-AA
<b>Video Extension Cable</b>	6-foot/1.8-meter video extension cable	BN39C-02

## Options

<b>Monitor Power Cords</b>	North America	BN26J-1K
	Australia, New Zealand, 2.5-meter (103541-011)	BN19H-2E
	Central Europe, 2.5-meter	BN19C-2E
	Denmark, 2.5-meter (103541-481)	BN19K-2E
	Egypt, India, South Africa, 2.5-meter (103541-AR1)	BN19S-2E
	Israel, 2.5-meter	BN18L-2E
	Italy, 2.5-meter (103541-461)	BN19M-2E
	Japan, 2.5-meter, Dentori approved	3X-BN46F-02
	Switzerland, 2.5-meter (103541-511)	BN19E-2E
	UK, Ireland, 2.5-meter	BN19A-2E

## Step 11 - Keyboards, Mouse

- Keyboards are not included with the system and must be ordered separately
- Selection of country-specific keyboard is recommended
- Select an opal OpenVMS keyboard for use with VT5xx text terminals.

**NOTE:** The 3X-LK463-xx is a dual-personality keyboard that can be used with a USB or PS/2 port.

## Options

	Opal	Carbon	
Keyboard/Language	OpenVMS	Tru64 UNIX	OpenVMS
U.S. keyboard	LK461-A2	3R-A4362-AA	3X-LK463-A2
Arabic keyboard	-	3R-A4348-AA	-
Belgian keyboard	LK461-AB	3R-A4349-AA	3X-LK463-AB
BHCSY keyboard	-	3R-A4350-AA	-
Canadian/English keyboard	LK461-AQ	-	3X-LK463-AQ
Canadian/French keyboard	LK461-AC	3R-A4351-AA	3X-LK463-AC
Cyrillic keyboard (Russian)	LK461-BT	3R-A4352-AA	3X-LK463-BT
Czech keyboard	LK461-BV	3R-A4353-AA	3X-LK463-BV
Danish keyboard	LK461-AD	3R-A4354-AA	3X-LK463-AD
Dutch keyboard	LK461-AH	3R-A4355-AA	3X-LK463-AH
Finnish keyboard	LK461-AF	3R-A4356-AA	3X-LK463-AF
French keyboard	LK461-AP	3R-A4357-AA	3X-LK463-AP
German keyboard	LK461-AG	3R-A4358-AA	3X-LK463-AG
Greek keyboard	LK461-BH	3R-A4359-AA	3X-LK463-BH
Hebrew keyboard	LK461-AT	3R-A4360-AA	3X-LK463-AT
Hungarian keyboard	LK461-BQ	3R-A4361-AA	3X-LK463-BQ
International keyboard	-	3R-A4362-AA	-
Italian keyboard	LK461-AI	3R-A4363-AA	3X-LK463-AI
Japanese keyboard	-	3R-A4364-AA	-
Korean keyboard	-	3R-A4365-AA	-
Latin-American keyboard	-	3R-A4366-AA	-
Norwegian keyboard	LK461-AN	3R-A4367-AA	3X-LK463-AN
Polish keyboard	LK461-BP	3R-A4368-AA	3X-LK463-BP
Portuguese keyboard	LK461-AV	3R-A4369-AA	3X-LK463-AV
Romanian keyboard	LK461-BL	-	3X-LK463-BL
Simplified Chinese keyboard	-	3R-A4370-AA	-
Slovak keyboard	LK461-CZ	3R-A4371-AA	3X-LK463-CZ
Spanish keyboard	LK461-AS	3R-A4372-AA	3X-LK463-AS
Swedish keyboard	LK461-AM	3R-A4373-AA	3X-LK463-AM
Swiss/French keyboard	LK461-AK	3R-A4374-AA	3X-LK463-AK
Swiss/German keyboard	LK461-AL	-	3X-LK463-AL
Traditional Chinese keyboard	-	3R-A4375-AA	-
Thai keyboard	-	3R-A4376-AA	-
Turkish Q keyboard	LK461-BU	3R-A4377-AA	3X-LK463-BU
Turkish/F keyboard	LK461-BW	-	3X-LK463-BW
UK keyboard	-	3R-A4378-AA	-
Yugoslavian keyboard	LK461-BY	-	3X-LK463-BY

**Mouse - Recommended** 3-button mouse - carbon

3R-A4565-AA

## Options

### Step 12 - Console Terminal - Optional

---

<ul style="list-style-type: none"> <li>Any terminal can be used as a console device.</li> <li>Third-party console devices require an EIA-232 25-pin DSUB connector.</li> </ul>	
VT510 video terminal; requires H8575-x cable, either male or female	VT510-xx
Console cable, female connector	H8575-A
Console cable, male connector	H8575-D
Console cable, male connector (IBM compatible)	H8575-E

---

### Step 13 - MEMORY CHANNEL - Optional

---

<b>Tru64 UNIX Systems</b>	<ul style="list-style-type: none"> <li>Requires Tru64 UNIX V5.0A or later and either TruCluster Server license (QL-6BRAC-AA) or TruCluster Plus Software Package (QP-6R9AC-AA)</li> </ul>
---------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

---

<b>OpenVMS Systems</b>	<ul style="list-style-type: none"> <li>Requires OpenVMS V7.1-2 or later and OpenVMS Cluster license (QL-MUZAC-AA)</li> </ul>
------------------------	------------------------------------------------------------------------------------------------------------------------------

---

### Configuring Information

- Up to two PCI-to-System Area Network adapters (CCMAB-BA) are supported in a single system.
  - Two-node clusters can be configured by ordering a CCMAB-BA for each node and one BN39B-04 or BN39B-10 cable; cable connects directly to CCMAB-BA in each node.
  - For a two-node cluster that will not need to be rebooted when adding additional members, order one CCMAB-BA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster.
  - For three- or four- node clusters, order one CCMAB-BA adapter and one BN39B-04 or BN39B-10 cable for each node, and one CCMHB-AA hub for the cluster
  - CCMHB-AA includes four CCMLB-AA line cards and supports up to four nodes; expansion up to eight system nodes can be achieved by adding up to four CCMLB-AA line cards.
  - If two CCMAB-AAs are configured in each system, a second CCMHB-AA is required for greater than 2 node configurations.
  - If nodes must be separated by a distance longer than standard copper cables allow the CCMFB option converts the output of the standard CCMAB controller or CCMLB line card to single-mode fiber optic cable. The fiber optic connection may be up to 2,000 meters long between two CCMAB controllers connected in virtual hub mode, or 3,000 meters between a CCMAB controller and a CCMHB hub. (The connection from the CCMHB hub to a second system may also be 3,000 meters.) The CCMFB option requires a second PCI slot in the system from which it draws power only. It is normally connected to the prerequisite CCMAB controller with the short BN39B-01 cable provided with the CCMFB. The CCMFB is also used in the CCMHB hub where it occupies a slot normally used by the CCMLB line card, limiting expansion to four radial fiber optic connections.
  - CCMHB-BA hub does not contain any line cards and can be used to plug in up to eight CCMFB fiber optic converters. Two standard length single-mode fiber optic cables are available (BN34R-10 and BN34R-31); however, users normally provide this fiber optic connection. Fiber optic connectivity is completely transparent to the systems using it and has no performance impact.
  - For integration of MEMORY CHANNEL hubs into cabinet configurations, a rackmount kit (2T-MAVRK-AA) and power cord (BN35S-02) are required
  - Please refer to Systems and Options Listing at - [http://www.compaq.com/alphaserver/options/asds10/asds10\\_options.html](http://www.compaq.com/alphaserver/options/asds10/asds10_options.html) for additional configuration information and restrictions.
-

## Options

<b>MEMORY CHANNEL Controller</b>	PCI System Area Network Controller, maximum two	CCMAB-BA
	System Area Network Hub with four line cards; includes BN19P-2E power cord for Canada, Japan, and U.S. operations- for other regions, order appropriate power cord from list below	CCMHB-AA
	Hub expansion box with no line cards	CCMHB-BA
	Expansion line card for CCMHB hub	CCMLB-AA
	1-meter cable for CCMAB and CCMHB	BN39B-01
	4-meter cable for CCMAB and CCMHB	BN39B-04
	10-meter cable for CCMAB and CCMHB	BN39B-10
	Copper-to-single mode fiber optic converter - requires BN34R-xx fiber optic connection	CCMFB-BA
	Rackmount kit for CCMHB hub	2T-MAVRK-AA
	Power cord for rackmount CCMHB hub	BN35S-02

<b>MEMORY CHANNEL Power Cords</b>	Australia, New Zealand and China (103541-011)	BN19H-2E
	Central Europe	BN19C-2E
	Denmark (103541-481)	BN19K-2E
	Egypt, India (103541-AR1)	BN19S-2E
	Ireland, United Kingdom	BN19A-2E
	Israel	BN18L-2E
	Italy (103541-461)	BN19M-2E
	Switzerland (103541-511)	BN19E-2E

## Step 14 - Floor Stand

<b>Floor Stand</b>	Floor Stand for AlphaServer/AlphaStation DS10	3X-BA73P-AA
--------------------	-----------------------------------------------	-------------

## Step 15 - Software - Required selection of media and documentation for first system on site

<b>Tru64 UNIX</b>	● Software processor code = E
	● AlphaServer DS10 Tru64 UNIX systems include Base license, Unlimited User license, Server Extension license, Internet Express, and Secure Web Server
	● AlphaStation DS10 Tru64 UNIX systems include 2-user Base license

## Options

<b>When using Tru64 UNIX V5.0A or later</b>	Tru64 UNIX media and online documentation on CD-ROM	QA-6ADAA-H8
	Tru64 UNIX full hard copy documentation	QA-6ADAA-GZ
	TruCluster Plus Software Package with licenses for TruCluster Server, Logical Storage Manager, and AdvFS Utilities	QP-6R9AC-AA
	TruCluster Server License	QL-6BRAC-AA
	AdvFS Utilities License	QL-0EGAE-AA
	Logical Storage Manager License	QL-2GVAE-AA
	Advanced Server for Tru64 UNIX, 25 client concurrent use license	QL-5U29M-3D
	Advanced Server for Tru64 UNIX, 50 client concurrent use license	QL-5U29M-3E
	Advanced Server for Tru64 UNIX, 100 client concurrent use license	QL-5U29M-3F
	Advanced Server for Tru64 UNIX, 250 client concurrent use license	QL-5U29M-3G
	Advanced Server for Tru64 UNIX, 500 client concurrent use license	QL-5U29M-3H
	Layered products media and documentation for Tru64 UNIX on CD-ROM	QA-054AA-H8
	DECnet/OSI end-system license for Tru64 UNIX	QL-MTJAE-AA
	DECnet/OSI extended function license for Tru64 UNIX	QL-MTKAE-AA

## Options

### OpenVMS

- AlphaServer DS10 OpenVMS systems include Base license with System Manager license and Enterprise Integration Server License Package for OpenVMS Revision V3.0A.
- AlphaStation DS10 OpenVMS systems include Base license, Concurrent Use1-user license, and NAS 150 Client license.
- Enterprise Integration Package includes licenses for TCP/IP Services for OpenVMS, DECwindows Motif for OpenVMS Alpha, DECprint Supervisor for OpenVMS Alpha Plus, DECprint Supervisor for OpenVMS Open, DECnet-Plus for OpenVMS Alpha End System, Archive/Backup System for OpenVMS Management Tools, Archive/Backup Agent for Windows NT, OpenVMS Disk Services for Windows NT, Office Server for OpenVMS, PATHWORKS 32, PATHWORKS V6 for OpenVMS – Advanced Server, and DIGITAL Office Server Client Access License

OpenVMS V7.1-2 media and online documentation on CD-ROM	QA-MT1AR-H8
OpenVMS V7.2-1 media and online documentation on CD-ROM	QA-MT1AT-H8
OpenVMS media and online documentation on CD-ROM	QA-MT1AA-H8
OpenVMS hard copy documentation	QA-001AA-GZ
Layered products media and documentation for OpenVMS on CD-ROM	QA-03XAA-H8

- OpenVMS Concurrent Use licenses provide the right to interactively use the operating system by the specified number of concurrent users on a designated OpenVMS system. OpenVMS Concurrent Use licenses can be moved from one system to another at user discretion and can be shared in a mixed OpenVMS VAX and OpenVMS Alpha cluster.
- OpenVMS Traditional Unlimited Use license is system specific and can only be used on one single system at a time. It cannot be shared between systems or in an OpenVMS VAX or OpenVMS Alpha Cluster.

Concurrent Use 1-user license	QL-MT3AA-3B
Concurrent Use 2-user license	QL-MT3AA-3C
Concurrent Use 4-user license	QL-MT3AA-3D
Concurrent Use 8-user license	QL-MT3AA-3E
Concurrent Use 16-user license	QL-MT3AA-3F
Concurrent Use 32-user license	QL-MT3AA-3G
Concurrent Use 64-user license	QL-MT3AA-3H
Concurrent Use 128-user license	QL-MT3AA-3J
Concurrent Use 256-user license	QL-MT3AA-3K
Traditional Unlimited User license	QL-MT2AE-AA
OpenVMS Cluster license for Alpha systems	QL-MUZAC-AA
OpenVMS Cluster Client license for Alpha systems	QL-3MRAC-AA
OpenVMS Cluster Client-to-Full OpenVMS Cluster Migration license	QL-6J7AC-AA

Linux Kit - Optional	Linux Red Hat CD-ROM Kit	QA-6M1AA-H8
----------------------	--------------------------	-------------

## Step 16 - Hardware and Software Support Services

### Hardware and Software Support Services

- Select one of the optional HP Care Pack Service Packages described below that best supports the customer's operational requirements for system availability.

## Options

### HP Care Pack Services

- HP Care Pack Services are available for AlphaServer/AlphaStation systems running Tru64 UNIX or OpenVMS operating systems. HP Care Pack Services are designed for customers who require support beyond that provided by the hardware warranty with coverage for both Principal servers/stations and SSPs (Subsequent System Packages) - that meet a full range of customer support requirements.

---

### Program Features – Principal Server/Station

#### HP Support Plus

- 13 x 5 HW/SW support
- 4-hour response on-site hardware support
- 2-hour response for software support
- License Subscription for HP O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Consolidated Software Media Update Distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Consolidated Media Update Distribution can be ordered separately.)

---

#### HP Support Plus 24

- 24 x 7 HW/SW support
- Named HW engineer
- 4-hour response on-site hardware support
- 2-hour response for software support
- License Subscription for HP O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Consolidated Software Media Update Distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not included on Consolidated Media Update Distribution can be ordered separately.)

---

### Program Features – Additional Services

#### SSPs (Subsequent System Packages)

- For HP Care Pack Support Plus and Support Plus 24
- HW Support at same level as corresponding package for Principal server/station
- License Subscription: HP O/S (where applicable)
- Telephone support through Principal server/station covered by full support package

---

### Installation

- Pre-installation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- No software installation added

---

### Installation & Startup HP O/S

- Pre-installation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- Install operating systems
- Product configuration
- Print and network access
- Orientation



## Options

Model/HP Care Pack Services	Principal Server/Station 1 year	Principal Server/Station 3 years	Subsequent Systems 1 year	Subsequent Systems 3 years
AlphaServer/AlphaStation DS10				
HP Support Plus	FP-A01BA-12	FP-A01BA-36	FP-A21BA-12	FP-A21BA-36
HP Support Plus 24	FP-A02BA-12	FP-A02BA-36	FP-A22BA-12	FP-A22BA-36
Installation	FP-AINST-BA	FP-AINST-BA	FP-AINST-BA	FP-AINST-BA
Installation & Startup	FP-ASTAR-BA	FP-ASTAR-BA	FP-ASTAR-BA	FP-ASTAR-BA

### NOTES:

- AlphaServer/AlphaStation DS10 systems include three years hardware warranty with 5x9, on-site Next Business Day response.
- HP Care Pack Services include support for new HP branded hardware options internal to the AlphaServer/AlphaStation enclosure plus a monitor (17-inch or less excluding flat panel models).
- External storage devices/cabinets carry their own level of warranty and should be quoted separately for uplifted warranty services.
- In addition to the HP Care Pack Services shown above, other service packages are available for separate hardware and software support. For more information on Hardware and Software Upfront Services and other HP service options available for AlphaServers and AlphaStations, consult your Sales Account Manager, HP Services Principal, or visit <http://www.hp.com/hps/>

### TechSpecs

<b>Physical Characteristics</b>	<b>Dimensions</b> (H x W x D)	5.1 x 17.6 x 19 in (13 x 45 x 48 cm)
	<b>Weight</b> (maximum)	36 lb (16.3 kg)

Cabinets	H9A10 M-Series	H9A15 M-Series	Series 10000 Rack (10642)
<b>Dimensions</b> (H x W x D)	67 x 23.6 x 36.1 in (170 x 60 x 91.6 cm)	79 x 23.6 x 36.1 in (200 x 60 x 91.6 cm)	78.7 x 24 x 39.69 in (199.9 x 60.96 x 100.82 cm)
<b>Shipping Dimensions</b>	73 x 36 x 48 in (185.5 x 91.5 x 122 cm)	85 x 36 x 48 in (216 x 91.5 x 122 cm)	86.22 x 32 x 48 in (219 x 81.28 x 121.92 cm)
<b>Weight</b>	280 lb (126 kg)	313 lb (142 kg)	253 lb (114.84 kg)
<b>Shipping Weight</b>	354 lb (159.3 kg)	369 lb (167.4 kg)	284 lb (129 kg)
<b>Loading Capacity</b>	1,408 lb (640 kg) maximum	1,408 lb (640 kg) maximum	2,000 lb 909.1 kg) maximum

<b>System Unit</b>	<b>Environmental</b>	
	<b>Temperature</b>	Operating (Tower, Rackmount) 50° to 104° F (10° to 40° C)  <b>NOTE:</b> Maximum operating temperature at sea level. Reduce by 1.8° F (1° C) for each 2,000 ft (660 m) above sea level.  Non-operating -40° to 151° F (-40° to 66° C)
	<b>Humidity</b>	Operating 10% to 95% Non-operating 20% to 80%
	<b>Heat Dissipation</b>	Single unit = 176 Watts = 601 BTU/Hr Rack of 12 systems = 2112 Watts = ~7,212 BTU/Hr
	<b>Typical System</b>	AlphaServer DS10 600 MHz Power Supply, 300W Main logic board containing Alpha CPU, EV6, 600 MHz Main memory = 1 GB (3) Hard disk drive (1) Floppy disk drive (1) CD-ROM disk drive (1) PCI Graphics Card (1) PCI Graphics Card Running system exerciser during the power measurement. Measured Input Voltage = 116 VAC RMS @ 60Hz Measured Input Current = 2.27 Amps RMS Measured Input Power = 176 Watts
	<b>Altitude</b> (unpressurized)	Operating 40,000 ft (12,192 m)
		Non-operating 10,000 ft (3,048 m)
	<b>NOTE:</b> Higher altitudes are possible if maximum operating temperature is reduced.	
	<b>Electrical</b> (Power supplies are universal, PFC, auto ranging, 100/240 VAC)	
	<b>Nominal Voltage</b> (VAC)	100 to 120 VAC/220 VAC
	<b>Operating Voltage Range</b> (VAC) (temporary condition)	90 to 128 VAC/180 to 265 VAC
	<b>Power Source Phase</b>	Single/Single/Single
	<b>Nominal Frequency</b> (Hz)	60 Hz/50 Hz
	<b>Frequency Range</b> (Hz)	59 to 61 Hz /49-51 Hz

TechSpecs

<b>Maximum Inrush Current</b>		11 amps/22 amps		
<b>Power Supply</b> (single cordset)		12 amps/5 amps		
<b>Acoustics</b> (Declared values per ISO 9296 and ISO 7779)				
<b>AlphaServer DS10 with one HDD</b>		<i>LWAdB</i>	<i>LpAm</i> , dBA (Operator position)	<i>LpAm</i> , dBA (Bystander Position)
	Idle	5.7	48	41
	Operating	6.0	52	45
<b>Regulatory</b>		Agency Approvals	UL: Listed to UL1950 (3rd edition) CUL Listed: CAN/CSA-C22.2 No. 950-M95 TUV: EN 60950/A11: 1997 GS marked FCC: Part 15 Class B CE: EN55022, EN50082 VCCI Class II ITE BMSI: CISPR22, CNS13438 C-Tick: CISPR22, AS/NZS 3548 AS/NZ 3260:1993 Australian/New Zealand Standard EN 60950/A11: 1997 European Norm IEC950 (2nd edition, 4th amend)	
		Reviewed to		

© Copyright 2001-2004 Hewlett-Packard Development Company, L.P.  
The information contained herein is subject to change without notice.  
UNIX is a registered trademark or trademark of The Open Group in the U.S. and/or other countries. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.